POLYGALACEAE

A CONSPICUOUS NEW SPECIES OF *MURALTIA*

Recently, while working at Kew, I found *Esterhuysen* 24754 among the South African material of *Polygala*. It certainly looked like a *Polygala* but, after careful study, I concluded that it belonged rather to the genus *Muraltia,* which is confined to South Africa, with the exception of *M. flanaganii* which extends northwards to Tanzania. After consulting Levyns's (1954) excellent monograph, it became clear that the specimen represented a new species.

Muraltia is closely allied to *Polygala* L., but differs in having an ericoid habit (rare in *Polygala);* flowers solitary and axiliary (in terminal or lateral racemes, rarely solitary in *Polygala);* the carina is differentiated into claw and limb, with a cushion-like swelling (this differentiation is absent in *Polygala),* a 2-lobed expanded, leaf-like crest (fimbriate or plurilobed, rarely absent in *Polygala);* 7 stamens *(Polygala* has 8 stamens, rarely 9, 4 or 5, sometimes only 6 fertile with 2 staminodes); the filaments are united almost to the base of the anthers (in *Polygala* they are usually free for a considerable distance); and lastly, in *Muraltia* the anthers dehisce through a longitudinal slit (in *Polygala* dehiscence takes place through a large oblique pore). The pollen morphology (zonocolporate) is similar to that of *Polygala,* but more homogeneous.

Turczaninow (1855) divided *Muraltia* into two sectins, which were considered as subgenera by Harvey (1860) and Levyns (1954). After an extensive study of herbarium material of *Polygala* (all African species and representatives of every main division of the genus), I cannot accept the division of *Muraltia* into two subgenera. The genus is morphologically much more homogeneous than *Polygala* and its pollen grain is always zonocolporate and isopolar in contrast to *Polygala,* which has isopolar and heteropolar pollen. If one accepts the two divisions of *Muraltia* as subgenera, one would have to divide *Polygala,* not into subgenera, but into separate genera, which is unacceptable. *Polygala* is a world-wide, very heterogenous, genus, but a good one and it is doubtful whether anyone would suggest or accept the splitting of *Polygala* into separate genera. There are no valid geographical or distributional grounds for accepting that *Muraltia* should be divided into two subgenera. Therefore, *Muraltia* must be regarded as having two sections, namely sect. *Muraltia* and sect. *Psiloclada* Turzc in Bull. Soc. Imp. Nat. Moscou 27, 4: 353 (1855). These two sections may be easily distinguished by applying Levyns's subgeneric key:

Leaves usually fascicled, sometimes solitary; flowers sessile or with short pedicels; inner sepals usually slightly longer than the outer; crest attached in various ways; capsule never cernuous, often with long horn-like processes at the apex, occasionally without horns ..... sect. *Muraltia*

Leaves solitary; flowers with distinct, often long pedicels; inner sepals much longer than the outer; attachment of the crest long, almost vertical; capsule often cernuous, with or without 4 short horn-like processes at the apex, the horns never long and slender ..... sect. *Psiloclada*

Section *Psiloclada* appears to be transitional between *Muraltia* sect. *Muraltia* and *Polygala* in the following characters: in having the two inner sepals coloured and sometimes almost wing-like, much longer than the outer ones, and a usually hornless capsule indistinguishable from that of *Polygala.* The new species, *M. elsieae,* which belongs to sect. *Psiloclada,* has the largest wings (inner sepals) in the genus, resembling a *Polygala,* hence the initial identification of the plant as a *Polygala.* In spite of this superficial resemblance in flower and in fruit (capsule hornless and broadly winged), it is nevertheless a true *Muraltia* (ericoid habit, solitary flowers; carina with distinct claw and limb, a cushion-like swelling, and an expanded leaf-like crest; stamens 7).

The new species, *M. elsieae,* is named after Miss Elsie Esterhuysen of the Bolus Herbarium, whose collections in South Africa have made a valuable contribution to the knowledge of the flora of that country. It can easily be distinguished from the other species in the section by adapting the first dichotomy in Levyns's key to subgen. *Psiloclada.* On the characters, 'Inner sepals about twice as long as the outer, concealing the carina, leaves rough; capsule without apical horns or teeth', she keys out only *M. polyphylla* (DC.) Levyns. The key can be amended as follows:

1. Inner sepals at least twice as long as the outer, concealing the carina; capsule without apical horns or teeth:
   Flowers 4 – 5 mm long, inner sepals about twice as long as the outer; leaves scabrous, 5 – 10 mm long ... 9. *M. polyphylla*
   Flowers 11 – 13,5 mm long, inner sepals more than twice as long as the outer; leaves not scabrous, 15 – 25 mm long ..... 9a *M. elsieae*
1. Inner sepals much less than twice as long as the outer, not concealing the tip of the carina; capsule with apical horns or teeth: ..... *Remaining species*

Muraltia elsieae *J. Paiva,* sp. nov.

Frutex ramosus circa 1,5 m altus; rami teretes glabri. *Folia* alterna petiolata, petiolo 0,5 mm longo glabro; lamina 15–25 × 1–1,5 mm, lanceolato-linearis, apice subacuta, breviter mucronata, glabra. *Flores* purpurei, solitarii pedicello 2–3 mm longo glabro; bracteae bracteolaeque similes, 1–1,5 mm longae, cucullatae, ovatae, ciliatae, obtusae. *Sepala* inaequalia; sepalum posterius, 2,5 × 1,5 mm, ovatum, apice nonnihil apiculatum, ciliatum; alae 11–13,5 × 4,5 mm, ovato-ellipticae, apice obtusae, basim versus ciliatae; sepala anteriora libra 2 × 1,5 mm, ovata, apice nonnihil apiculata, ciliata. *Petala superiora* 6–7 × 1 mm, oblonga, sed ad basim majora obtusa, quam carina paulo longiora; carina 3,5 × 1,5–1,8 mm, ungue limbum aequanti; crista ampla 1 mm longa, lobis superioribus et inferioribus similibus. *Ovarium* 1 × 0,75 mm, applanato-ellipsoideum, apice bilobatum glabrum; stylus gracilis, 1,5 longus, teres, lobo posteriore stigmatico bene evoluto longiore, anteriore breviore truncato glabro. *Capsule* 6 – 7 × 5,5–6 mm, applanato-ellipsoidea, apice bilobata, glabra, margine alata, 1,3–1,8 mm lata. *Semina* 5 × 1,5 mm, ellipsoidea, sparse albo-pubescentia, carunculata; caruncula 1,5 mm longa, pubescens, appendicibus brevibus membranaceis.

TYPE.—Cape, 3321 (Ladismith): Seven Weeks Poort, rocky slopes, 990–1 320 m, fl. & fr. 1955-10-13, *Esterhuysen 24754* (BOL.; K, holotypus).

Slender single-stemmed shrub c. 1,5 m tall, branching above, branches cylindric, glabrous. *Leaves* alternate, very shortly petiolate (petiole 0,5 mm long, glabrous), 15 – 25 × 1–1,5 mm, lanceolate-linear, subacute and shortly mucronate at the apex, glabrous. *Flowers* pale purple, solitary; pedicels 2–3 mm long, glabrous, bracts and bracteoles similar, 1–1,5 mm long, obtuse, cucculate ovate, ciliate. *Sepals* unequal; posterior 2,5 × 1,5 mm, ovate-elliptic somewhat apiculata at the apex, ciliate; wing-sepals

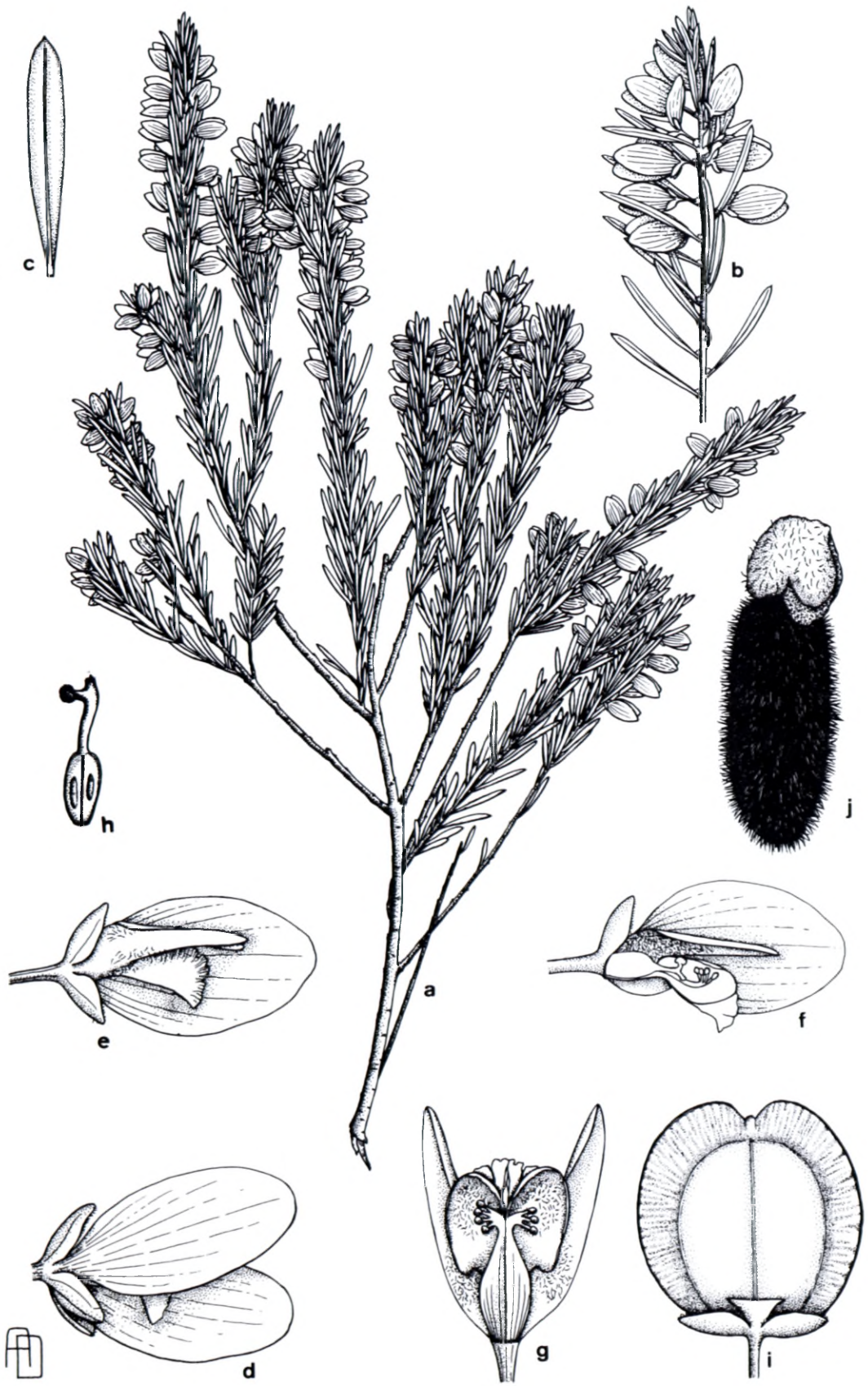

FIG. 28.—*Muraltia elsieae*. a, habit (× 0,7); b, small section of branch (× 1,3); c, leaf (× 2,7); d, flower (× 5,3); e, flower with one wing removed (× 5,3); f, vertical section of flower (× 5,3); g, flower without sepals and ovary (× 6,7); h, ovary, style and stigma (× 6,7); i, capsule (× 5,3); j, seed (× 13,3). All from *Esterhuysen* 24754.

11–13,5 × 4–5 mm, ovate-elliptic, obtuse at the apex, ciliate towards the base; anterior sepals free, 2 × 1,5 mm, ovate, somewhat apiculate at the apex, ciliate. *Petals,* the upper 6–7 × 1 mm, oblong but enlarged towards the base, obtuse, sparsely pubescent towards the base outside, and pubescent inside, somewhat apiculate, slightly longer that the carina; carina 3,5–4 × 1,5–1,8 mm, with the claw as long as the limb; crest 1 mm long with superior and inferior lobes similar. *Ovary* broadly ellipsoid, 1 × 0,75 mm, glabrous, shortly bilobed at the apex; style 1,5 mm long, terete, the anterior branch bruncate, glabrous, the posterior stigmatic branch well-developed. *Capsule* 6–7 × 5,5–6 mm, broadly ellipsoid to subcompressed globose, bilobed at apex, glabrous, margin winged (wing 1,3–1,8 mm wide). *Seed* 5 × 1,5 mm, ellipsoid, sparsely white pubescent; caruncle 1,5 mm long, pubescent and with very short appendage. Fig. 28.

CAPE.—3321 (Ladismith): Seven Weeks Poort, *Esterhuysen* 24754 (BOL; K, holotypus); *Marloth* 2946 (BOL).

REFERENCES

HARVEY, W. H., 1860. Polygaleae. In W. H. Harvey & O. Sonder, *Fl. Cap.* 1: 79–113.

LEVYNS, M. R., 1949. The floral morphology of some South African members of Polygalaceae. *Jl S. Afr. Bot.* 15: 79–92.

LEVYNS, M. R., 1952. Clues to the past in the Cape Flora of to-day. *S. Afr. J. Sci.* 49, 3–4: 155–164.

LEVYNS, M. R., 1954. The genus *Muraltia*. *Jl S. Afr. Bot.,* Suppl. 2, 247 pp.

LEVYNS, M. R., 1955. Some geographical features of the family Polygalaceae in Southern Africa. *Trans. r. Soc. S. Afr.* 34, 3: 379–386.

TURCZANINOW, N., 1855. Animadversiones ad primam partem herbarii Turczaninowiani, nuc Universitatis Caesarea Charkoviensis. *Bull. Soc. Imp. Nat. Moscou* 27, 4: 271 (bis)–372.

J. A. R. PAIVA*